

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS S-KM-3.101-GS/PL
		Former Designation: ESP-KM-3.101-GS
TITLE: Clamps - Metric - Inch Series (Noun Code - 1640)	CURRENT REV No.: 1506	DATE: June 2015
WRITTEN/EDITED BY: Materials Engineering	APPROVED BY: Materials Engineering	SUPERSEDES: ESP-KM-3.101-GS - February 2014
PRINTED COPIES OF THIS DOCUMENT MUST BE VERIFIED FOR CURRENT REVISION		
<i>This specification may involve hazardous materials, equipment, and procedures. This specification does not purport to address all of the safety issues associated with its use. The user is responsible to consult appropriate safety and health practices and to determine the applicability of regulatory limits prior to use.</i>		
Change Notice: Changed to New MPAPS format; Combined GS, PP, NPP.		

1.0 GENERAL: This standard covers Closed Clamps designed to fasten and securely hold cables, wire harnesses, tubing, hose, engine accessories, etc. Coated clamps, though more costly initially, provide protection from abrasion and corrosion and also provide electrical insulation, sound abatement, and some shock absorption.

2.0 CONTENTS:

	Page
General	1
Gap (Closed Clamps)	1
Clamp Material	1
Coating Material	1
Finish	2
Restricted Chemical Substances	2
Workmanship	2
Preferred Sizes	2
Non-Preferred Sizes	7
Technical Information	9

3.0 GAP (Closed Clamps): Light Duty Series - 1.6 mm (.062 inch).

Medium Duty Series- 0.8 mm (.031 inch) for clamping diameters 3.2 mm (1/8 inch) through 7.9 mm (5/16 inch) and 1.6 mm (1/16 inch) for clamping diameters 9.5 mm (3/8 inch) through 50.8 mm (2 inches).

4.0 CLAMP MATERIAL: Steel, Grade 1C, Temper No. 4, MPAPS A-6, Part I
OR Steel, Grade 1 Galvanized, 60G60GU, MPAPS A-6, Part II

5.0 COATING MATERIAL: The following alternate coating materials, in accordance with the specification shown for each, may be furnished:

Vinyl Plastisol per TMS-6007, Type 1, Grade C - Adhesion to the metal must be sufficient to prevent removal of coating without destroying the coating. Nominal thickness 0.8 + 0.25 - 0.3 mm (.031 + .010 - .012 inch). Color: black. Maximum service temperature is approximately 110°C (230°F).

This document is restricted and may not be sent outside Navistar, Inc. or reproduced without permission from Corporate Technical Standards. Suppliers are required to assume all patent liability. ©2015 by Navistar, Inc.

JUNE 2015



Documents

Document Sharing Hub

Page 1 of 9

NUMBER: MPAPS S-KM-3.101-GS/PL	TITLE: Clamps	REVISION: 1506
---	--------------------------------	---------------------------------

Latex - Grade LSC 515 K1 per SAE J19. Suffix K1 requires that adhesion to the metal must be sufficient to prevent removal of the coating without destroying the coating. Minimum thickness is to be 0.6 mm (.025 inch). Color: black. Maximum service temperature is approximately 110°C (230°F).

Polyethylene coating is an acceptable alternate for clamps manufactured outside of North America.

The coating coverage is to extend a minimum of 270 degrees around the clamping diameter with the clamp in the open position. There will be no bare metal contact allowed between the clamp and the clamped element in the closed position.

6.0 FINISH: Clamps will be furnished plain or plated in accordance with the spec listed below:

Zinc Trivalent (ZN6A/GALV) – MPAPS G-20, Class 6A

OR Steel, Grade 1 Galvanized, 60G60GU, MPAPS A-6, Part II

Phosphate Coating (PHC) – MPAPS G-1, Class B-1

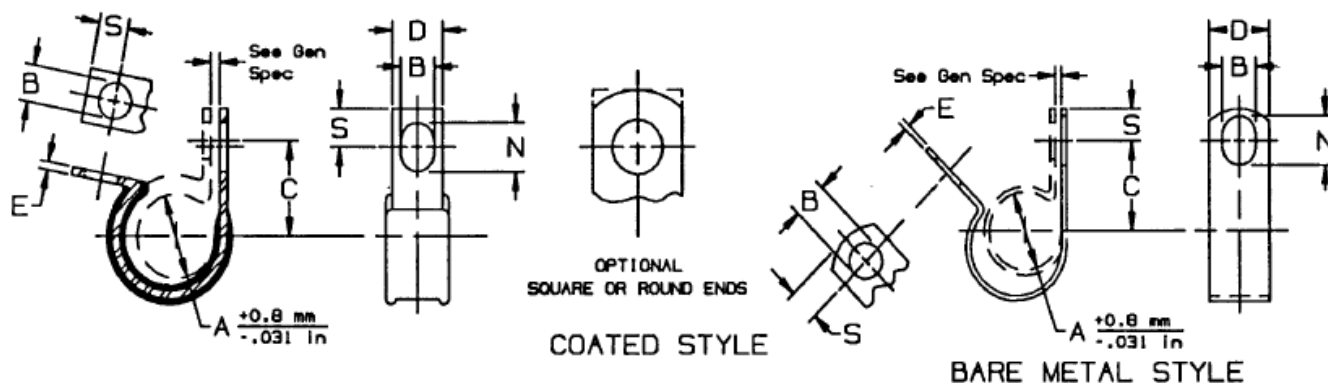
Plain (No Finish) (PLN)

7.0 RESTRICTED CHEMICAL SUBSTANCES: Effective January 1, 2007, all product supplied to the requirements of this specification must comply with the requirements of the MPAPS B-50 specification.

8.0 WORKMANSHIP: Clamps must be reasonably free from burrs, loose scale, sharp edges, and all other defects that might affect their serviceability.

9.0 PREFERRED SIZES:

9.1 Medium Duty – Furnished Open (0.8 mm/.030 IN Minimum Metal Thickness):



LINEAR MEASURE: $\frac{\text{mm}}{\text{IN}}$ · mm/IN

This document is restricted and may not be sent outside Navistar, Inc. or reproduced without permission from Corporate Technical Standards. Suppliers are required to assume all patent liability. ©2015 by Navistar, Inc.

JUNE 2015



Documents

Page 2 of 9
Document Sharing Hub

NUMBER: MPAPS S-KM-3.101-GS/PL	TITLE: Clamps	REVISION: 1506
---	--------------------------------	---------------------------------

Clamping Diameter *				Nominal Bolt Size		Hole Diameter		Minimum Thickness		Center to Center		Width		Hole Center To End		Slot Length	
						B		E		C		D		S		N	
Coated		Bare Metal				± .041	± .015	± 0.15	± .006	± 0.8	± .031	± 1.6	± .062	± 1.6	± .062	± 1.6	± .062
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
3.2	0.13	4.8	0.19	(3)	3/8 ⁽¹⁾	10.3	.406	0.8	.030	15.1	.594	19.1	.750	11.1	.438	12.7	.500
4.8	0.19	6.4	0.25	M6	1/4	7.1	.281	0.8	.030	12.7	.500	12.7	.500	7.9	.312	9.5	.375
				(3)	3/8 ⁽¹⁾	10.3	.406	0.8	.030	15.9	.625	19.1	.750	11.1	.438	12.7	.500
				M12 ⁽²⁾	1/2 ⁽²⁾	13.5	.531	0.8	.030	19.0	.750	22.2	.875	14.3	.562	15.9	.625
6.4	0.25	7.9	0.31	M6	1/4	7.1	.281	0.8	.030	13.5	.531	12.7	.500	7.9	.312	9.5	.375
				(3)	3/8 ⁽¹⁾	10.3	.406	0.8	.030	16.7	.656	19.1	.750	11.1	.438	12.7	.500
				M12 ⁽²⁾	1/2 ⁽²⁾	13.5	.531	0.8	.030	19.8	.781	22.2	.875	14.3	.562	15.9	.625
7.9	0.31	9.5	0.38	M6	1/4	7.1	.281	0.8	.030	14.3	.562	12.7	.500	7.9	.312	9.5	.375
				(3)	3/8 ⁽¹⁾	10.3	.406	0.8	.030	17.5	.688	19.1	.750	11.1	.438	12.7	.500
				M12 ⁽²⁾	1/2 ⁽²⁾	13.5	.531	0.8	.030	20.6	.812	22.2	.875	14.3	.562	15.9	.625
9.5	0.38	11.1	0.44	M6	1/4	7.1	.281	0.8	.030	15.1	.594	12.7	.500	7.9	.312	9.5	.375
				(3)	3/8 ⁽¹⁾	10.3	.406	0.8	.030	18.3	.719	19.1	.750	11.1	.438	12.7	.500
				M12 ⁽²⁾	1/2 ⁽²⁾	13.5	.531	0.8	.030	21.4	.844	22.2	.875	14.3	.562	15.9	.625
11.1	0.44	12.7	0.50	M6	1/4	7.1	.281	1.1	.044	15.9	.625	12.7	.500	7.9	.312	9.5	.375
				(3)	3/8 ⁽¹⁾	10.3	.406	1.1	.044	19.1	.750	19.1	.750	11.1	.438	12.7	.500
				M12 ⁽²⁾	1/2 ⁽²⁾	13.5	.531	1.1	.044	22.2	.875	25.4	1.000	14.3	.562	15.9	.625
12.7	0.50	14.3	0.56	M6	1/4	7.1	.281	1.1	.044	16.7	.656	12.7	.500	7.9	.312	9.5	.375
				(3)	3/8 ⁽¹⁾	10.3	.406	1.1	.044	19.8	.781	19.1	.750	11.1	.438	12.7	.500
				M12 ⁽²⁾	1/2 ⁽²⁾	13.5	.531	1.1	.044	23.0	.906	25.4	1.000	14.3	.562	15.9	.625
14.3	0.56	15.9	0.63	M6	1/4	7.1	.281	1.1	.044	17.5	.688	12.7	.500	7.9	.312	9.5	.375
				(3)	3/8 ⁽¹⁾	10.3	.406	1.1	.044	20.6	.812	19.1	.750	11.1	.438	12.7	.500
				M12 ⁽²⁾	1/2 ⁽²⁾	13.5	.531	1.1	.044	23.8	.938	25.4	1.000	14.3	.562	15.9	.625
15.9	0.63	17.5	0.69	M6	1/4	7.1	.281	1.1	.044	18.3	.719	12.7	.500	7.9	.312	9.5	.375
				(3)	3/8 ⁽¹⁾	10.3	.406	1.1	.044	21.4	.844	19.1	.750	11.1	.438	12.7	.500
				M12 ⁽²⁾	1/2 ⁽²⁾	13.5	.531	1.1	.044	24.6	.969	25.4	1.000	14.3	.562	15.9	.625
17.5	0.69	19.1	0.75	M6	1/4	7.1	.281	1.1	.044	19.1	.750	12.7	.500	7.9	.312	9.5	.375
				(3)	3/8 ⁽¹⁾	10.3	.406	1.1	.044	22.2	.875	19.1	.750	11.1	.438	12.7	.500
				M12 ⁽²⁾	1/2 ⁽²⁾	13.5	.531	1.1	.044	25.4	1.000	25.4	1.000	14.3	.562	15.9	.625
19.1	0.75	20.6	0.81	M6	1/4	7.1	.281	1.1	.044	19.8	.781	12.7	.500	7.9	.312	9.5	.375
				(3)	3/8 ⁽¹⁾	10.3	.406	1.1	.044	23.0	.906	19.1	.750	11.1	.438	12.7	.500
				M12 ⁽²⁾	1/2 ⁽²⁾	13.5	.531	1.1	.044	26.2	1.031	25.4	1.000	14.3	.562	15.9	.625
20.6	0.81	22.2	0.88	M6	1/4	7.1	.281	1.1	.044	20.6	.812	12.7	.500	7.9	.312	9.5	.375
				(3)	3/8 ⁽¹⁾	10.3	.406	1.1	.044	23.8	.938	19.1	.750	11.1	.438	12.7	.500
				M12 ⁽²⁾	1/2 ⁽²⁾	13.5	.531	1.1	.044	27.0	1.062	25.4	1.000	14.3	.562	15.9	.625

This document is restricted and may not be sent outside Navistar, Inc. or reproduced without permission from Corporate Technical Standards. Suppliers are required to assume all patent liability. ©2015 by Navistar, Inc.

JUNE 2015



Documents

Page 3 of 9
Document Sharing Hub